MISSOURI DEPARTMENT OF NATURAL RESOURCES

Cement Kiln Update

Fact Sheet
1/1998

Division of Environmental Quality
Hazardous Waste Program

Introduction

Cement kilns in Missouri that burn hazardous waste derived fuel must comply with the requirements of all applicable State and Federal Hazardous Waste Laws. This update is intended to give the status of the cement kilns including some particular aspects of the permit process that apply to the kilns.

- The status of hazardous waste permits for cement kilns.
- The corrective action process.
- The multi-pathway risk assessment.

New Decision Dates on Cement Kilns

Officials from both the Missouri Department of Natural Resources (DNR) and the U.S. Environmental Protection Agency (EPA) met recently to discuss target dates for permit actions on all hazardous waste management facilities in Missouri.

Topping the list were the four cement kilns that burn hazardous waste in Missouri under interim status. Permit decisions on three of the kilns were moved back an average of six months. The fourth, River Cement in Festus, stopped burning hazardous waste during the summer of 1997.

The new projected dates for final permit decisions have been announced:

- Continental Cement - September 1998
- Holnam - Safety Kleen - December 1998
- Lonestar Industries - June 1998

These are the dates that DNR and EPA intend to make a decision to grant or deny the permit. If the initial decision is to grant the permit, DNR will make the announcement by issuing a news release to the media in the surrounding area, mailing a letter to adjacent landowners, elected officials and any one who asks to be placed on the mailing list and individuals who have commented so far. DNR and EPA will host an availability session and public hearing whenever there is a decision to issue a draft permit.

River Cement Out of the Hazardous Waste Business

River Cement in Festus, ceased burning hazardous waste in June 1997. In a letter to the department dated May 8, 1997, the company stated their intention to cease receiving hazardous waste and close all hazardous waste units. The decision by River Cement means they forfeit their

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interim status. DNR approved River Cement's closure plan for the hazardous waste storage and burning on November 25, 1997. River Cement will have to conduct a site wide investigation for hazardous waste contamination resulting from past practices and clean up any contamination found.

What is Corrective Action?

Corrective Action is a process for investigating, monitoring and cleaning up contamination resulting from releases of hazardous waste or hazardous constituents.

Facilities that are regulated under the federal Resource Conservation and Recovery Act (RCRA), or an authorized state hazardous waste program, must complete corrective action. The four Missouri cement kilns that have burned hazardous waste are subject to the corrective action process. The corrective action process is composed of four main steps:

RCRA Facility Assessment (RFA) is a preliminary evaluation by DNR or EPA to identify actual and potential areas of contamination. The RFA includes a file review and a visual site inspection and may involve sampling and analysis of soil, surface water or ground water.

RCRA Facility Investigation (RFI) is a thorough investigation of all areas where there have been actual or possible releases of hazardous waste or hazardous constituents. The investigation determines the nature, extent and rate of migration of the contamination. The RFI is performed by the facility with EPA or DNR oversight and is the foundation for the corrective measures study.

Corrective Measures Study (CMS) is a facility specific evaluation of all potential cleanup options and the recommendation of the preferred remedy by DNR or EPA. The CMS is based on the findings of the RFI and other relevant site information.

Corrective Measures Implementation (CMI) is the execution of the preferred remedy approved during the CMS and associated public participation. Implementation occurs only after the public has had an opportunity to review and comment on the preferred remedy.

The Multi-Pathway Risk Assessment: What It Is and What It Is Not

A risk assessment is a process of gathering and assessing information on any potential harm to human health or the environment from exposure to a substance. It is geared toward protection of general public health and the environment.

The multi-pathway risk assessment is a method that evaluates health risks from direct exposure from inhalation and estimates the indirect human exposures that result from the pollution of soils, plants and water. The potential risks to human health are intentionally over estimated by making conservative assumptions about potential for exposure and emissions from the facility. The results are intended to give the highest potential risk posed by a facility under worst-case scenarios.

Risk assessments are not required by regulation. However, EPA Administrator Carol Browner developed a policy to incorporate risk assessments into the permitting process for combustion facilities in 1993 and 1994. Although scientists have learned a great deal about environmental contaminants, the methodology and data available for conducting risk assessments is the subject of ongoing scientific research. These limitations may make the use of risk assessments in regulatory decisions controversial. However, it is best to attempt to identify all potential risks rather than disregard them.

Process Overview

There are four basic steps typically used in risk assessments: hazard identification, dose response assessment, exposure assessment and risk characterization. These steps are not set guidelines for risk assessments, but a general organization common in most assessments.

Hazard identification determines the type of risk a particular chemical agent poses to human health. The assessor gathers and analyzes all relevant site data and identifies all chemicals of concern. In the case of cement kilns that burn hazardous waste, the trial burn emissions are the primary data of concern in the multi-pathway risk assessment.

The dose-response assessment determines the relationship between amount and concentration of a chemical and the resulting health hazards due to exposure.

Exposure assessment requires the assessor to create several exposure scenarios based on real or hypothetical situations. The assessor identifies all potential exposure pathways, estimates contaminant intake for each pathway and calculates the human exposure concentration for each pathway taking into account the age of the person(s) exposed and the length of exposure.

In **risk characterization**, the assessor combines information from the hazard identification and the exposure assessment to calculate the type and magnitude of human health risks that may result from exposure through each pathway of each scenario. The assessor also considers areas of uncertainty that might affect the outcome of the assessment. The result is an assessment of potential health risks based on available data and mathematical projections. They are best estimates, not irrefutable fact.

Conclusion

Ideally, risk assessments describe what risks are possible under present or future conditions. However, due to the uncertainty inherent in risk assessments, no one can predict the precise risk. Risk assessments do provide a range of risk from minimum to maximum. Risk assessments are used as a guide, not as the reason, for making decisions on environmental and human health issues. Perhaps the best application for risk assessments is to unveil potential hazards that may otherwise go unnoticed. This is the reason for incorporating risk assessments into the permitting process for cement kilns that burn hazardous waste.

Permit Applications and Trial Burn Reports are Available for Public Review.

Continental Cement:
Hannibal Free Public Library
200 S. Fifth Street
Hannibal, MO 63401

Lone Star Industries:
Cape Girardeau Public Library
7111 N. Clark
Cape Girardeau, MO 63701

Holnam Inc:
Bowling Green Public Library
201 W. Locust Street
Bowling Green, MO 63334

River Cement:
(Closure Plan)
Festus Public Library
222 N. Mill Street
Festus, MO 63028

For More Information

This fact sheet has been prepared to help introduce concerned citizens in Missouri to some important aspects of hazardous waste law. For more information, call the Missouri Department of Natural Resources at (800) 361-4827. Or write to the Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102.

You can also visit our website at www.state.mo.us/dnr/deq/hwp/homehwp.htm or email rmorriso@mail.state.mo.us